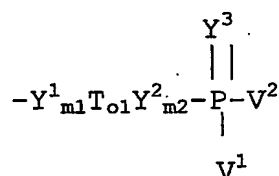


CLAIMS

1. A coated stent for implantation in human vessels, orifices and conduits for creating and sustaining openings there and for preventing restenosis thereof after implantation comprising a stent structure coated with a compound containing a high density, negatively charged domain of at least three vicinally oriented phosphorus-containing radicals.

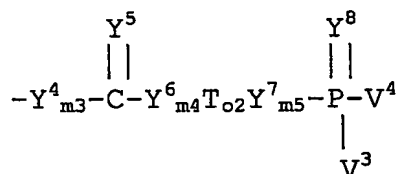
2. A coated stent according to claim 1 wherein the phosphorus-containing radicals have the following formula:

a)



or

b)



wherein

V^1 to V^4 are $\text{Y}^8_{\text{m}6}\text{T}_{\text{o}3}\text{U}$

$\text{T}_{\text{o}1}$ to $\text{T}_{\text{o}3}$ are $(\text{CH}_2)_n$, CHCH , or $\text{CH}_2\text{CHCHCH}_2$

$\text{o}1$ to $\text{o}3$ are 0 to 1

n is 0 to 4

U is $\text{R}^1\text{Y}^9_{\text{m}7}$, $\text{CY}^{10}\text{Y}^{11}\text{R}^2$, $\text{SY}^{12}\text{Y}^{13}\text{Y}^{14}\text{R}^3$, $\text{PY}^{15}\text{Y}^{16}\text{Y}^{17}\text{R}^4\text{R}^5$, $\text{Y}^{18}\text{PY}^{19}\text{Y}^{20}\text{Y}^{21}\text{R}^6\text{R}^7$, CH_2NO_2 , $\text{NH}\text{SO}_2\text{R}^8$ or $\text{NHCY}^{22}\text{Y}^{23}\text{R}^9$

$\text{m}1$ to $\text{m}7$ are 0 to 1

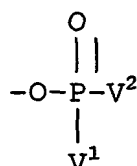
Y^1 to Y^{23} are N , R^{10} , NOR^{11} , O or S

and where R^1 to R^{11} are

- i) hydrogen
- ii) a straight or branched saturated or unsaturated alkyl residue containing 1-22 carbon atoms
- iii) a saturated or unsaturated aromatic or non-aromatic homo- or heterocyclic residue containing 3-22 carbon atoms and 0-5 heteroatoms consisting of nitrogen, oxygen or sulfur
- iv) a straight or branched saturated or unsaturated alkyl residue containing 1-22 carbon atoms substituted with a saturated or unsaturated aromatic or non-aromatic homo- or heterocyclic residue containing 3-22 carbon atoms and 0-5 heteroatoms consisting of nitrogen, oxygen or sulfur
- v) an aromatic or non-aromatic homo- or heterocyclic residue containing 3-22 carbon atoms and 0-5 heteroatoms consisting of nitrogen, oxygen or sulfur substituted with a straight or branched saturated or unsaturated alkyl residue containing 1-22 carbon atoms.

in the said groups ii-v, the residues and/or the substituents thereof being substituted with 0-6 of the following groups: hydroxy, alkoxy, aryloxy, acyloxy, carboxy, alkoxycarbonyl, alkoxycarbonyloxy, aryloxy carbonyl, aryloxy carbonyloxy, carbamoyl, fluoro, chloro, bromo, azido, cyano, oxo, oxa, amino, imino, alkylamino, arylamino, acylamino, arylazo, nitro, alkylthio or alkylsulfonyl.

3. A coated stent according to claim 2 wherein the phosphorus-containing radicals have the following formula:



wherein V^1 and V^2 are OH, $(CH_2)_p$ OH, COOH, CONH₂, CONOH, $(CH_2)_p$ COOH, $(CH_2)_p$ CONH₂, $(CH_2)_p$ CONOH, $(CH_2)_p$ SO₃H, $(CH_2)_p$ SO₃NH₂, $(CH_2)_p$ NO₂, $(CH_2)_p$ PO₃H₂, O(CH₂)_p OH, O(CH₂)_p COOH, O(CH₂)_pCONH₂, O(CH₂)_pCONOH, $(CH_2)_p$ SO₃H, O(CH₂)_pSO₃NH₂, O(CH₂)_pNO₂, O(CH₂)_pPO₃H₂, CF₂COOH
and p is 1 to 4

4. A coated stent according to claim 3 wherein the phosphorus-containing radicals are phosphate groups.
5. A coated stent according to anyone of claims 1-4 wherein a backbone to the high density negatively charged region of vicinally oriented phosphorus-containing radicals is a cyclic moiety.
6. A coated stent according to claim 5 wherein the backbone is a saturated or unsaturated aromatic or non-aromatic homo- or heterocyclic moiety where the heteroatom is nitrogen, oxygen, sulfur or selenium.
7. A coated stent according to claim 6 wherein the cyclic moiety comprises 4 to 24 atoms, preferably 5 to 18 atoms.
8. A coated stent according to claim 7 wherein the cyclic moiety is selected from the group of cyclopentane, cyclohexane, cycloheptane, inositol, monosacharide, disacharide, trisacharide, tetrasacharide, piperidin, tetrahydrothiophyran, 5-oxotetrahydrothiopyran, 5,5-dioxotetrahydrothiopyran, tetrahydroselenophyran, tetrahydrofuran, pyrrolidine, tetrahydrothiophene, 5-oxotetrahydrothiophene, 5,5-dioxotetrahydrothiophene, tetrahydroselenophene, benzene, cumene, mesitylene, naphtalene and phenanthrene.

9. A coated stent according to claim 8 where in the cyclic moiety is selected from the group of alloinositol, cisinositol, epiinositol, D/L-chiroinositol, scylloinositol, myoinositol, mucoinositol and neoinositol.

10. The use according to claim 8 wherein the cyclic moiety is selected from the group of D/L-ribose, D/L-arabinose, D/L-xylose, D/L-lyxose, D/L-allose, D/L-altrose, D/L-glucose, D/L-mannose, D/L-gulose, D/L-idose, D/L-galactose, D/L-talose, D/L-ribulose, D/L-xylulose, D/L-psicose, D/L-sorbose, D/L-tagatose and D/L-fructose.

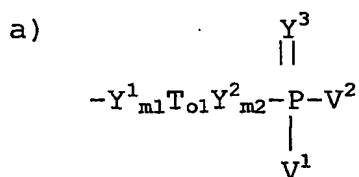
11. A coated stent according to claim 3 wherein one of the phosphorus-containing radicals is axial and, two of the phosphorus-containing radicals are equatorial.

12. A coated stent according to claim 11 wherein the compound is selected from the group of myo-inositol-1,2,6-trisphosphate, myo-inositol-hexa-kis-phosphate, mannose-2,3,4-trisphosphate, rhamnose-2,3,4-trisphosphate, galactose-2,3,4-trisphosphate, methyl-6-O-butyl- α -D-mannopyranoside-2,3,4- trisphosphate, 1,5-anhydro-D-arabinitol-2,3,4-trisphosphate, fructose-2,3,4-trisphosphate, 1,2-O-ethylene- β -D-fructopyranoside-2,3,4-trisphosphate, cyclohexane-1,2,3-triol trisphosphate, 1,5-dideoxy-1,5-iminoarabinitol-2,3,4-trisphosphate, altrose-2,3,4-trisphosphate, methyl-6-O-butyl- α -D-altropyranoside-2,3,4-trisphosphate or derivatives thereof.

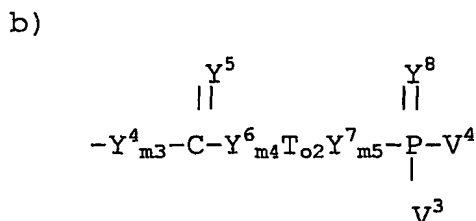
13. The use a restenosis resistant stent implantation to a human patient comprising the steps of selecting a coated stent for implantation in human vessels, orifices and conduits for creating and sustaining openings there and for preventing, alleviating or combatting restenosis thereof

after implantation, comprising a stent structure coated with a compound containing a high density, negatively charged domain of at least three vicinally oriented phosphorus-containing radicals.

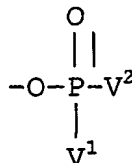
14. The use according to claim 13 wherein the compound containing phosphorus-containing radicals have the following formula:



or



15. The use according to claim 13 where the compound containing phosphorus-containing radicals have the following formula:



16. The use according to claim 13 wherein the compound is selected from the group of myo-inositol-1,2,6-trisphosphate, myo-inositol-hexa-kis-phosphate, mannose-2,3,4-trisphosphate, rhamnose-2,3,4-trisphosphate, galactose-2,3,4-trisphosphate, methyl-6-O-butyl- α -D-mannopyranoside-2,3,4- trisphosphate, 1,5-anhydro-D-arabinitol-2,3,4-

trisphosphate, fructose-2,3,4-trisphosphate, 1,2-O-ethylene- β -D-fructopyranoside-2,3,4-trisphosphate, cyclohexane-1,2,3-triol trisphosphate, 1,5-dideoxy-1,5-iminoarabinitol-2,3,4-trisphosphate, altrose-2,3,4-trisphosphate, methyl-6-O-butyl- α -D-altropyranoside-2,3,4-trisphosphate or derivatives thereof.